who completed three psychometric instruments prior to priming for stem cell collection and at approximately day 42 post ASCT. The three instruments are the Functional Assessment of Cancer Therapy – Bone Marrow Transplant (FACT-BMT), measuring quality of life; Brief COPE, measuring coping with illness; and Profile of Mood States (POMS) short form, measuring mood states.

In comparisons of patient and transplant characteristics including (but not limited to) gender, race, diagnosis, length of stay, and readmissions, the following significant differences were found between patients 60+ and under 60 years of age: Patients 60+ had a slightly longer length of stay (median 21 vs. 20 days, $p = 0.013$), were more likely to have NHL (75% vs. 61%), and less likely to have Hodgkins (2% vs.19%, $p < 0.001$).

Many significant differences were found in quality of life scores between patients 60+ and under 60. Patients 60+ reported better social, emotional, and functional well-being at both pre-transplant and at day 42 post-transplant ($p \leq 0.05$). The 60+ group also reported better physical well-being at pre-transplant compared to the under 60 group ($p = 0.022$). Regarding significant differences in coping, the 60+ group used less coping techniques of self-distraction, behavioral disengagement, venting, planning, humor, and self-blame, but reported more acceptance in coping with illness ($p \leq 0.05$). There are four significant differences between the two groups on mood states but only at pre-transplant. The 60+ group reports less depression, anger, tension, and confusion than the under 60 group ($p \leq 0.05$). It is surprising patients over 60 report better quality of life, better mood states, and less utilization of coping techniques. It seems that older patients are more accepting of illness and impact on functioning, perceive themselves as not needing as much support to cope, and report less negative impact on mood states than their younger counterparts.

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### LONG-TERM FOLLOW-UP AFTER ALLOGENEIC HEMATOPOIETIC PROGENITOR CELL TRANSPLANTATION IN PEDIATRIC PATIENTS-MULTICENTER STUDY

*Gorczynska, E.[1], Dyla, A.[1], Owoc-Lempch, J.[1], Musial, J.[1], Turkiewicz, D.[1], Kalwak, K.[1], Ussowicz, M.[1], Chybicka, A.[1], Pieczonka, A.[2], Jacek, W.[2], Wojcik, B.[3], Kowalczyk, J.[3] [1] Wroclaw Medical University, Wroclaw, Poland; [2] University of Medical Sciences, Poznan, Poland; [3] Medical University, Lublin, Poland*

Hematopoietic progenitor cell transplantation (HPCT) remains a salvage therapy for both malignant and non-malignant disorders. However, it may result in late sequelae which negatively influence the quality of life. The aim of this study was to evaluate the long-term impact of HPCT on the patients' health status. Two hundred thirty one patients, who survived over one year after allogeneic HPCT were included into the study. The median age at HPCT was 11.5 years (from 4 months to 18 years), the median follow-up period was 3.5 years (from 13 months to 12 years). One hundred eighty three subjects were transplanted due to malignant diseases (group I) and forty eight due to non-malignant disorders (group II). The frequency of late side effects, including chronic Graft-versus-Host Disease (GvHD), endocrinal dysfunctions and organs impairment, were compared between two groups using $chi^2$ test.

Only 65 (28.1%) patients in the study group did not suffer from any health problems. During the follow-up 15 (8.2%) patients in group I died due to late complications (6 cGvHD, 5 infections, 2 second neoplasm, 1 pulmonary artery thrombosis, 1 haemorrhage). In group II two (4.2%) patients died (1 cGvHD, 1 haemorrhage), $p = 0.34$. The incidence of late sequelae in group I and II was documented respectively: cGvHD 86 (47%) vs 10 (20.8%), $p = 0.001$; ocular complications 39 (21.3%) vs 4 (8.3%), $p = 0.04$; skin problems 69 (37.7%) vs 6 (12.5%), $p = 0.0009$; hormonal dysfunction 64 (35%) vs 19 (39.6%), $p = 0.55$; pulmonary complications 55 (30%) vs 9 (18.7%), $p = 0.12$; bone and joint impairment 32 (17.5%) vs 4 (8.3%), $p = 0.12$; cardiological dysfunction 25 (13.7%) vs 5 (10.4%), $p = 0.55$; kidney problems 5 (2.7%) vs 3 (6.2%), $p = 0.23$; neurological disorders 10 (5.5%) vs 1 (2.1%), $p = 0.16$; second neoplasm 3 (1.6%) vs 1 (2.1%), $p = 0.83$.

**Conclusions:** Majority of survivors after allogeneic HPCT develop late sequelae. Patients transplanted with the diagnosis of malignant disease are at higher risk of cGvHD resulting in further complications, mainly skin and ocular problems. Higher incidence of cGvHD in this cohort of patients may be due to less intensive immunosupressive therapy in comparison to the subjects transplanted due to non-malignant diseases. The impact of chemotherapy used in the treatment of malignancies prior to HPCT should also be taken into consideration. The multidisciplinary monitoring for a prolonged period of time after HPCT is strongly recommended.

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### MUSCLE WEAKNESS FOLLOWING ALLOGENEIC STEM CELL TRANSPLANTATION: ANALYSIS OF RISK FACTORS

*Kiguchi, D.[2], Nawa, Y.[1], Nakase, K.[1], Miyazaki, Y.[1], Kohashi, S.[1], Kadohisa, S.[1], Tauchi, H.[2], Kogami, S.[2], Hara, M.[1] [1] Ehime Prefectural Central Hospital, Matsuyama, Japan; [2] Ehime Prefectural Central Hospital, Matsuyama, Japan*

Allogeneic stem cell transplantation (allo-SCT) can cause severe adversed effects, which is associated with functional impairment and muscle weakness. In this study, we analyzed factors affecting muscle weakness after allo-SCT in 21 patients (13 male, 8 female) who had allo-SCT at Ehime Prefectural Central Hospital from April 2007–March 2009, Patient ages ranged from 26–64 (median 46 years) at the time of allo-SCT. Sixteen patients received stem cells from unrelated donors, and 5 received them from related donors. A myeloablative conditioning regimen was chosen for 14 patients, and 7 patients had a reduced intensity conditioning regimen. The patients received lower extremity muscle training while muscle strength was measured at the same time by a therapeutic exercise system (Strength Ergo 240, Mitsubishi Electric Corp., Tokyo, Japan). Percent changes of lower extremity muscle strength before allo-SCT and 100 days after allo-SCT for each patient was calculated, and muscle strength was also compared using the Mann-Whitney U test between groups divided by various factors. The average percent change of lower extremity muscle strength was $-22.1 \pm 24.3\%$, and age group (26-46 vs. 47-64 years), sex, and conditioning regimens (myeloablative or non-myeloablative) did not significantly affect muscle strength. Patients who had higher does of steroids showed a tendency towards greater decreases in muscle strength (high dose, $-31.0 \pm 21.0\%$ vs. low dose, $-12.3 \pm 24.8\%$, $P = 0.057$). Source of stem cells (unrelated, $-28.8 \pm 24.0\%$ vs. related, $-0.5 \pm 6.1\%$, $P = 0.026$), grades of acute GVHD (grades 0-2, $-15.4 \pm 19.1\%$ vs. grades 3-4 $-62.2 \pm 1.1\%$, $P < 0.01$), and levels of serum albumin ($\geq 3.4$ g/dl, $-12.5 \pm 16.5\%$ vs. $<3.4$ g/dl, $-34.8 \pm 28.0\%$, $P = 0.047$) significantly affected the decrease of muscle strength. Our study suggests that muscle strength may be affected by the source of stem cells, nutritious status and complications after allo-SCT, and, patients at risk should receive more intensive therapy to prevent loss of muscle strength after transplantation.

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### A LONGITUDINAL COMPARISON OF QUALITY OF LIFE (QOL) IN PATIENTS WITH MYELOID MALIGNANCIES UNDERGOING ALLOGENEIC HEMATOPOIETIC CELL TRANSPLANTATION (ALLOHCT) USING MYELOABLATIVE (MY) OR REDUCED INTENSITY CONDITIONING (RIC)

*Gupta, V.[1], Li, L.[2], Panzarella, T.[2], Khan, J.[1], Galal, A.[1], Kuruvilla, J.[1], Lipton, J.[1], Messner, H.[1], Alibhai, S.[3] [1] Princess Margaret Hospital, Toronto, ON, Canada; [2] Princess Margaret Hospital, Toronto, ON, Canada; [3] Toronto General Hospital, ON, Canada*

There are limited data on the impact of intensity of conditioning on QOL in patients undergoing alloHCT. We undertook a prospective study to evaluate the outcomes and QOL in patients with myeloid malignancies undergoing alloHCT using MY or RIC. 115 patients were enrolled from Jan 2005 to Sep 2008 and no significant differences in the outcomes were observed in the two study cohorts at 1-year (abstract submitted separately).

Of 115 patients, 105 (91%) patients (MY, 44; RIC, 61) consented to participate in QOL study with QOL assessments at baseline, day30, day100, day180 and day365. QOL was assessed by the following measures: European Organization for Research and Treatment of Cancer core 30-item questionnaire (QLQ-C30), Functional Assessment of Cancer Therapy-bone marrow transplantation subscale (FACT-BMT), FACT anaemia and fatigue subscale (FACT-An),